



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

| | |
|-------------------------------|---------------------------------------|
| Purpose Permit number: | CPS 8924/1 |
| Permit Holder: | Fortescue Metals Group Ltd |
| Duration of Permit: | 26 September 2020 – 26 September 2025 |

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Road construction and upgrades.

2. Land on which clearing is to be done

Lot 556 on Deposited Plan 404911, Mount Sheila

3. Area of Clearing

The Permit Holder must not clear more than 0.9 hectares of native vegetation within the area hatched yellow on attached Plan 8924/1a, Plan 8924/1b and Plan 8924/1c.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

5. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

6. Weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

PART III - RECORD KEEPING AND REPORTING

7. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this Permit:

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit; and
- (e) actions taken to minimise the risk of the introduction and spread *weeds* in accordance with condition 6 of this Permit.

8. Reporting

The Permit Holder must provide to the *CEO* the records required under condition 7 of this Permit, when requested by the *CEO*.

DEFINITIONS

The following meanings are given to terms used in this Permit:


CEO: means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant –

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in the Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned.

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

3 September 2020

Plan 8924/1a

117°41'6.000"E

117°41'24.000"E

117°41'42.000"E

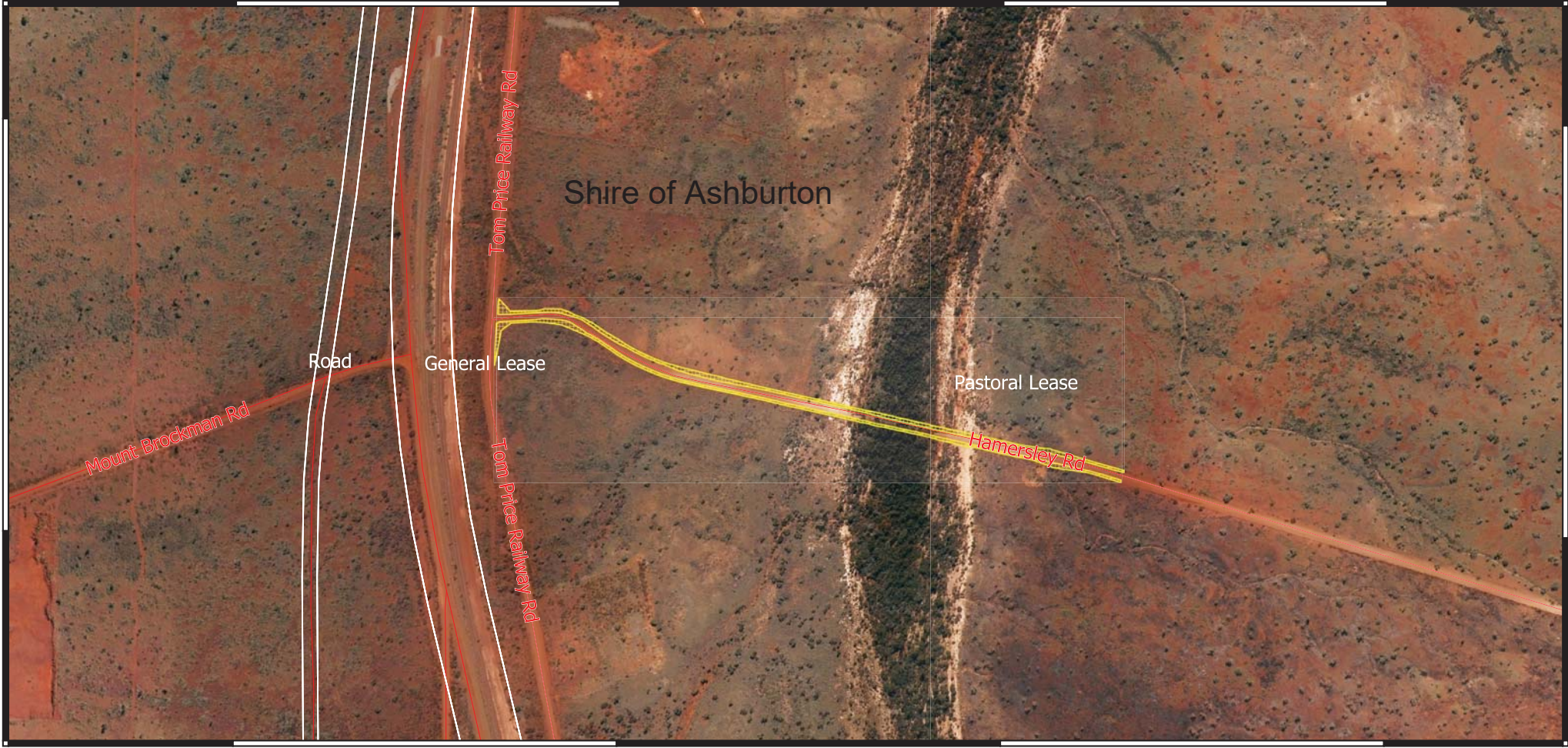
117°42'0.000"E

22°15'0.000"S

22°15'18.000"S

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117°41'6.000"E

117°41'24.000"E

117°41'42.000"E

117°42'0.000"E

Legend

-  CPS areas approved to clear
-  Cadastre - LGATE 218
-  Road Centrelines
-  Local Government Authorities

Image



0 0.1 0.2 0.3 0.4 0.5 km



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MGA Zone 50
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the
Environmental Protection Act 1986

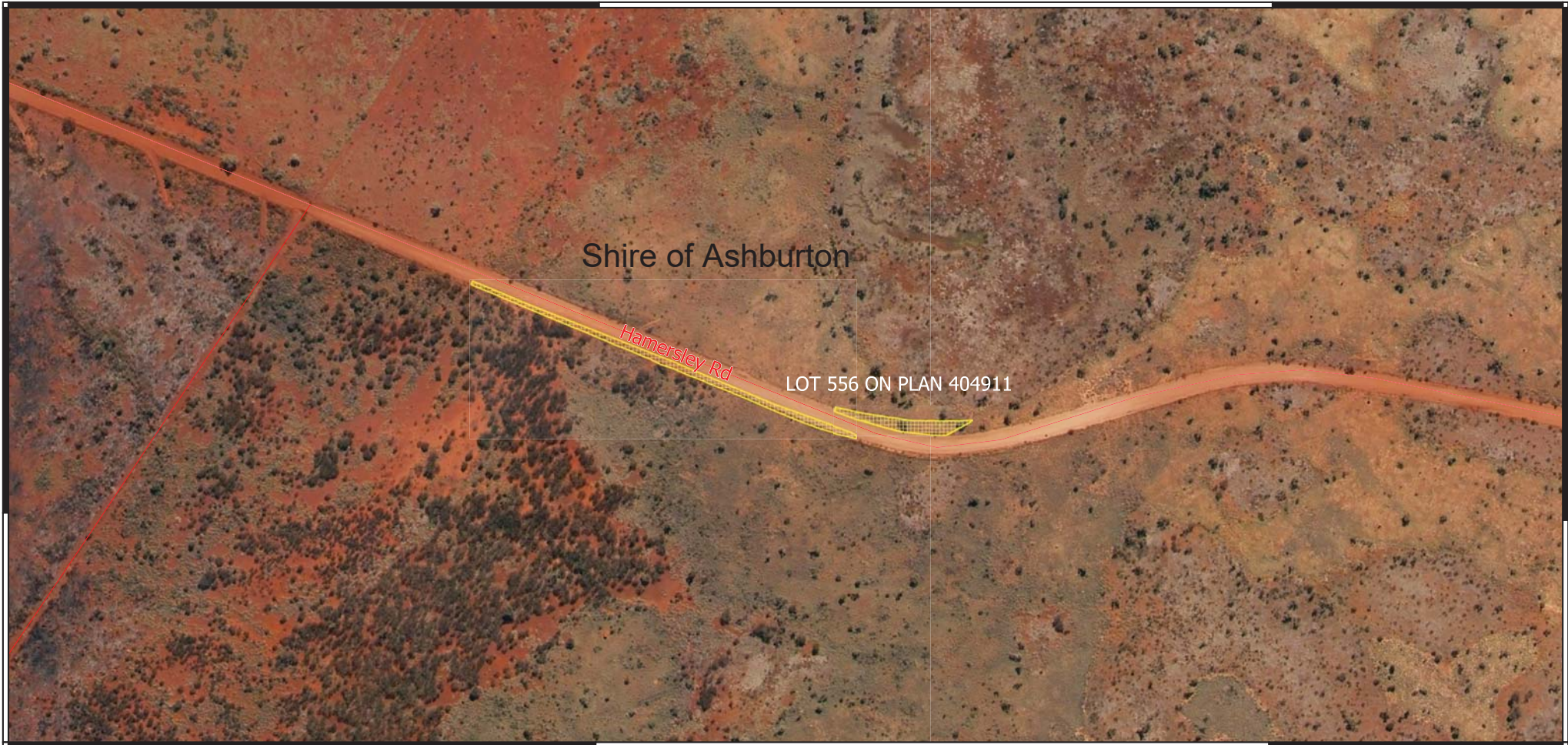


GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8924/1b

117°42'36.000"E

117°42'54.000"E



117°42'36.000"E

117°42'54.000"E

Legend

-  CPS areas approved to clear
-  Cadastre - LGATE 218
-  Road Centrelines
-  Local Government Authorities

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0 0.1 0.2 0.3 0.4 km



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MGA Zone 50
Geocentric Datum of Australia 1994


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Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8924/1c



Shire of Ashburton

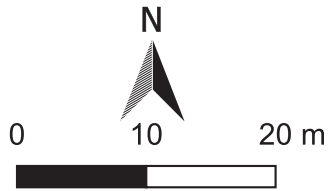
LOT 56 ON PLAN 404911

Hamersley Rd

Legend


-  CPS areas approved to clear
-  Cadastre - LGATE 218
-  Road Centrelines
-  Local Government Authorities

Image



1:549

MGA Zone 50
Geocentric Datum of Australia 1994


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Environmental Protection Act 1986





Clearing Permit Decision Report

1. Application details and outcome

1.1. Permit application details

| | |
|-------------------------------|--|
| Permit number: | CPS 8924/1 |
| Permit type: | Purpose permit |
| Applicant name: | Fortescue Metals Group Ltd |
| Application received: | 27 May 2020 |
| Application area: | 0.9 hectares (ha) of native vegetation |
| Purpose of clearing: | Road construction and upgrades |
| Method of clearing: | Mechanical |
| Property: | Lot 556 on Deposited Plan 404911 |
| Location (LGA area/s): | Shire of Ashburton |
| Localities (suburb/s): | Mount Sheila |

1.2. Description of clearing activities

The vegetation applied to be cleared is distributed across five separate areas (see Figures in Section 1.5). The application is to clear 0.9 hectares of native vegetation along Hamersley Road (within Lot 556 on Deposited Plan 404911), Mount Sheila, for the purpose of road construction and upgrades

1.3. Decision on application and key considerations

| | |
|-----------------------|--|
| Decision: | Granted |
| Decision date: | 3 September 2020 |
| Decision area: | 0.9 hectares (ha) of native vegetation as depicted in Section 1.5 below. |

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the Environmental Protection Act 1986 (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 27 May 2020. DWER advertised the application for public comment and no submissions were received.

In undertaking their assessment, and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the Clearing Principles in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Section 3).

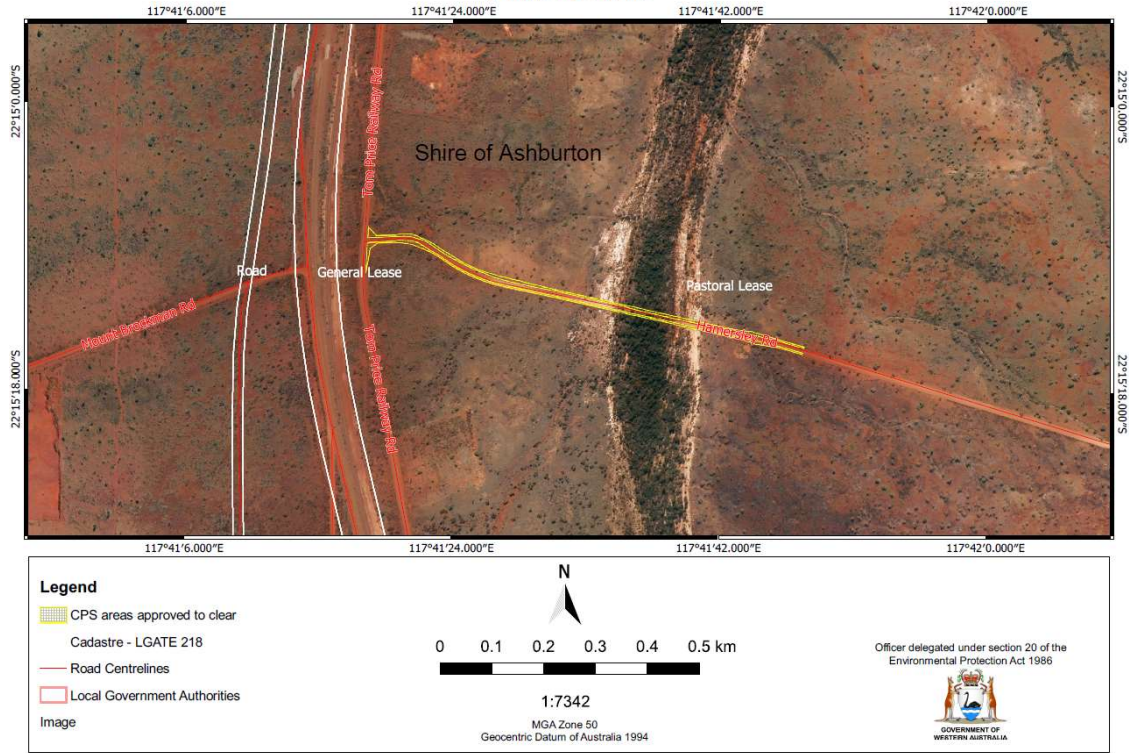
In particular, the Delegated Officer has determined that:

- the clearing is not likely to have a significant impact on the local population, or conservation status of conservation significant species recorded within the local area (see Section 3.2)
- the implementation of a suitable weed management condition is appropriate to mitigate the impact of spreading weeds into adjacent vegetation (see Section 3.2.)
- the applicant has suitably demonstrated avoidance and minimisation measures (see Section 3.1)

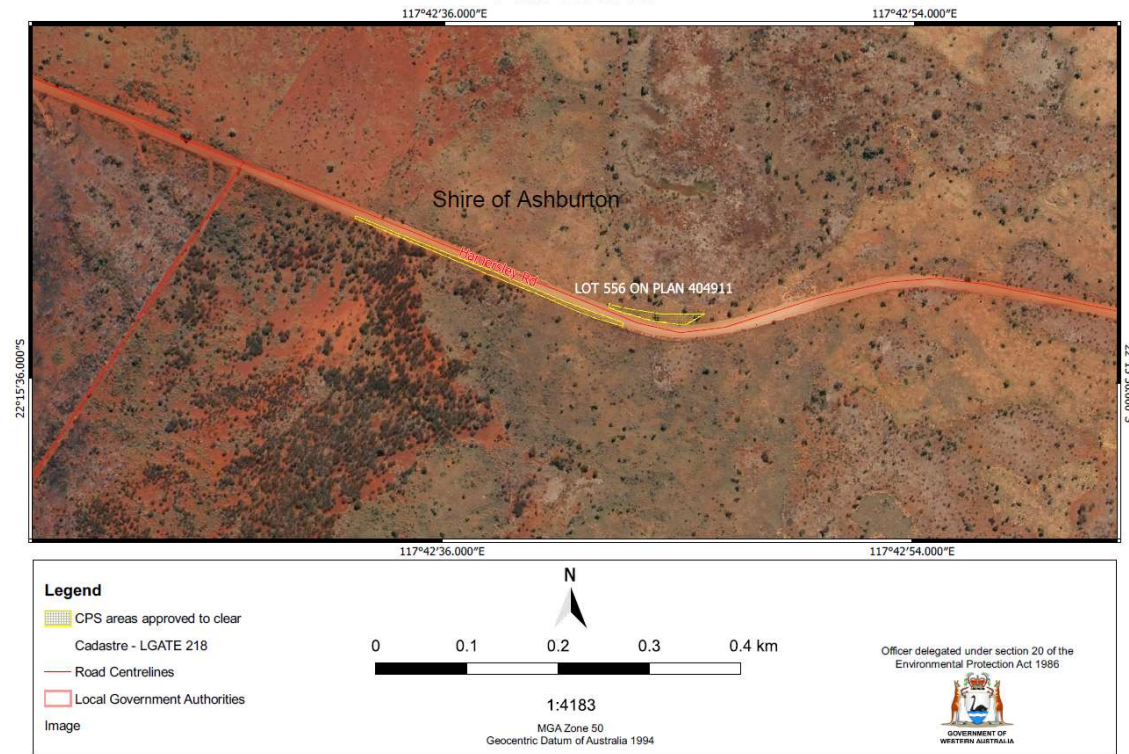
In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

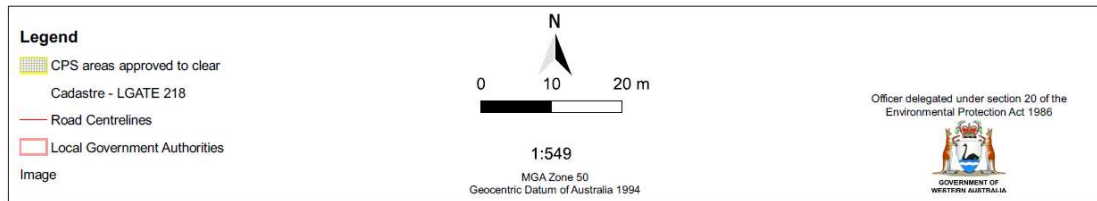
1.5. Site Plans

Plan 8924/1a



Plan 8924/1b





2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity; and
3. the principle of the conservation of biological diversity and ecological integrity

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

Relevant policies considered during the assessment were:

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The clearing is proposed to occur along an existing road which already transects the beds and banks of Weelumurra Creek, a tributary of the Fortescue River. The clearing within and adjacent to the existing road will minimise potential impacts of the clearing on environmental values.

3.2. Assessment of environmental impacts

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix A) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix B.

This assessment did not identify any matters likely to substantially impact on environmental values within the application area. As such, the limited impact of the clearing is acceptable and no further consideration of the environmental values, or imposition of management conditions are necessary.

3.3. Relevant planning instruments and other matters

If the proposed works will obstruct, interfere or destroy the bed or banks of a watercourse and the water resource is in a proclaimed surface water area, a beds and banks permit may be required.

The Shire of Ashburton has provided Fortescue Metals Group Ltd with a letter of authority to enter the public road to undertake the proposed works and have advised that the clearing is consistent with the Shire's Local Planning Scheme. The Shire did not have any objections to the clearing and has endorsed a Deed for FMG to undertake the construction, maintenance and works of Hamersley Road and has authorised FMG to apply for a clearing permit to undertake required works (Fortescue, 2020).

It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Appendix A – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix B.

1. Site characteristics

| Site characteristic | Details |
|------------------------|--|
| Local context | A total of 0.9 hectares of native vegetation is proposed to be cleared across five separate areas along Hamersley Road. It is surrounded by Crown Reserves (including unvested and some vested) and large tracts of remnant vegetation. A portion of the application area traverses Weelumurra Creek, a non-perennial tributary of the Fortescue River. The proposed clearing areas are small remnant patches of vegetation within a predominantly uncleared local area. Aerial imagery and spatial data indicate the local area (50 km radius of the proposed clearing area) retains over 90% of the original native vegetation cover. |
| Vegetation description | Vegetation descriptions provided in the applicant's supporting documents describe five vegetation community types that occur within the clearing envelope (Fortescue, 2020): AalmTe: <i>Acacia aneura</i> and <i>Acacia pruinocarpa</i> tall shrubland, over <i>Acacia ancistrocarpa</i> and <i>Eremophila longifolia</i> mid sparse shrubland, over <i>Indigofera monophylla</i> and <i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423) low sparse shrubland, over <i>Cenchrus ciliaris</i> tussock grassland. This type comprises approximately 0.05 ha of the clearing envelope. EIIAbTw2: <i>Eucalyptus leucophloia subsp. leucophloia</i> low open woodland, over <i>Acacia bivenosa</i> , <i>Senna glutinosa subsp. glutinosa</i> and <i>Senna artemisioides subsp. oligophylla</i> mid sparse shrubland, over <i>Triodia wiseana</i> open hummock grassland. This vegetation type comprises approximately 0.30 ha of the clearing envelope. EIIAiTw: <i>Eucalyptus leucophloia subsp. leucophloia</i> and <i>Corymbia hamersleyana</i> low sparse woodland over <i>Acacia inaequilatera</i> tall sparse shrubland over <i>Acacia bivenosa</i> |

| Site characteristic | Details |
|-----------------------|--|
| | <p>and <i>Senna glutinosa</i> subsp. <i>glutinosa</i> mid sparse shrubland over <i>Ptilotus calostachyus</i> low sparse over <i>Triodia wiseana</i> open hummock grassland. This vegetation type comprises approximately 0.20 ha of the clearing envelope.</p> <p>EvVfCc: <i>Eucalyptus victrix</i> mid open woodland, over <i>Vachellia farnesiana</i> and <i>Acacia pyrifolia</i> mid sparse shrubland, over <i>Cyperus vaginatus</i> and <i>Typha domingensis</i> mid sparse sedgeland, over <i>Themeda triandra</i> and <i>Cenchrus setiger</i> open tussock grassland. This vegetation type comprises approximately 0.05 ha of the clearing envelope.</p> <p>ExApTw: <i>Eucalyptus xerothermica</i> low open woodland over <i>Acacia pruinocarpa</i> tall sparse shrubland over <i>Senna artemisioides</i> subsp. <i>oligophylla</i> low sparse shrubland <i>Triodia wiseana</i> hummock grassland and <i>Chrysopogon fallax</i> tussock grassland. This vegetation type comprises approximately 0.30 ha of the clearing envelope.</p> <p>This is broadly consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> • Hammersly_82: which is described as Hummock grassland with scattered bloodwoods & snappy gum <i>Triodia</i> spp., <i>Corymbia dichromophloia</i>, <i>Eucalyptus leucophloia</i> (Shepherd et al, 2001). • Hammersly_18: which is described as low woodland, open low woodland or sparse woodland with species consisting of Mulga <i>Acacia aneura</i> and associated species (Shepherd et al, 2001). |
| Vegetation condition | <p>The applicant has stated that:</p> <p>“The vegetation health condition of the permit envelope abutting the existing access road is likely to be highly disturbed from historical road maintenance works and the resulting dust deposition on flora and vegetation as undertaken by the Shire of Ashburton. The vegetation condition within the permit envelope is expected to be ‘Poor’ using the adapted Keighery (1994) Vegetation Condition Scale for the Eremaean and Northern Botanical Provinces. Clearing associated with this permit envelope will not result in any additional environmental impacts.”</p> <p>While historical land use within and adjacent to the application areas is likely to have impacted vegetation condition, no specific photographs of the vegetation proposed to be cleared were provided to validate the condition of the vegetation.</p> |
| Soil description | <p>The soil descriptions mapped within the application area are:</p> <p>Calcrete System (285Ca) - Low calcrete platforms and plains supporting shrubby hard spinifex grasslands.</p> <p>Newman System (285Ne) - Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.</p> <p>Boolgeeda System (285Bg) - Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.</p> |
| Land degradation risk | Soil degradation risk is negligible across all soil systems. |
| Waterbodies | <p>The desktop assessment and aerial imagery indicate that Weelumurra Creek transects the application area in a north-south direction. This is a minor non-perennial watercourse and tributary of the Fortescue River.</p> <p>There are multiple other minor, non-perennial watercourses which occur within the local area.</p> |
| Conservation areas | The closest conservation area to the application area is Karijini NP which is located approximately 21 km to the east. |
| Climate and landform | Rainfall: 400mm |

| Site characteristic | Details |
|---------------------|--|
| | Evapotranspiration: 400mm Geology: Iron-formation and shale |

2. Flora, fauna and ecosystem analysis

Based on a review of currently available databases, two Priority 1 Ecological Communities and one Threatened Ecological Community are recorded within the local area (50 kilometre radius from application areas). Current records do not show any commonwealth listed conservation significant ecological communities mapped within the local area. A total of 24 conservation significant fauna and 53 conservation significant flora area recorded within the local area.

The local area retains over 95 percent remnant native vegetation. The vegetation types mapped within the application areas are widely represented within the local area and are unlikely to present regionally or locally unique habitat for conservation significant flora or fauna. As the application areas are located alongside Hamersley Road, it is likely that the vegetation is disturbed and given the small area proposed to be cleared (0.9 hectares over five separate areas), it is unlikely that the vegetation within the application area is of regional or local biological significance.

With consideration of the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information (Appendix D), it is not likely that conservation significant flora, fauna species and ecological communities will be significantly impacted by the proposed clearing.

Appendix B – Assessment against the Clearing Principles

| Assessment against the Clearing Principles | Variance level | Is further consideration required? |
|---|------------------------------|------------------------------------|
| Environmental value: biological values | | |
| <p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>According to currently available databases, no conservation significant fauna, flora or ecological communities are recorded within the application area. There are no recorded threatened flora species within the local area. Of the 24 conservation significant fauna species recorded within the local area five species are highly unlikely to occur within the application area due to specific habitat requirements that are not present, the other 19 species are found over large ranges and within habitats that are commonly represented within the local area. This is the same scenario for conservation significant flora that may occur within the application area. Given this, the vegetation present within the application area is not likely to support a high level of biological diversity.</p> | Not likely to be at variance | No |
| <p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u></p> <p>The proposed clearing area may contain habitat for conservation significant fauna, however, the application area is comprised of vegetation and fauna habitats that are typical of, and widely represented within the local area. The local area is highly vegetated retaining over 95 per cent remnant native vegetation. The vegetation proposed for clearing is along-side Hamersley Road and is unlikely to be in pristine condition. Given the small area proposed to be cleared (0.9 hectares over five separate areas), it is unlikely that the vegetation within the application area is necessary for the maintenance of significant fauna.</p> | Not likely to be at variance | No |

| Assessment against the Clearing Principles | Variance level | Is further consideration required? |
|--|------------------------------|------------------------------------|
| <p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>According to currently available databases, no threatened flora species are recorded within the local area. The local area is highly vegetated retaining over 95 per cent remnant native vegetation and given that the recorded vegetation communities within the application area are widely represented within the local area, it is unlikely that the proposed clearing area contains species or habitats necessary for the continued existence of threatened flora species listed under the BC Act (Fortescue, 2020).</p> | Not likely to be at variance | No |
| <p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.”</i></p> <p><u>Assessment:</u></p> <p>Based upon a review of currently available databases, there is one threatened ecological community (TEC) within the local area (Brockman Iron cracking clay communities of the Hamersley Range). The closest mapped occurrence of this TEC is approximately 1.28 kilometres from the application area. However, this TEC is not typically associated with the soil types and other site characteristics that are represented within the proposed clearing areas. Supporting documents provided by the applicant, including a broad ranging floristic survey that covers the application area state that there are no TEC’s within the proposed clearing area (Fortescue, 2020).</p> | Not likely to be at variance | No |
| Environmental values: significant remnant vegetation and conservation areas | | |
| <p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the mapped vegetation type and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia which has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).</p> <p>Remnant vegetation in the proposed clearing area is not considered to be part of a significant ecological linkage in the local area.</p> | Not likely to be at variance | No |
| <p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance and lack of topographic connectivity to the nearest conservation area (Karijini National Park located approximately 21 kilometres east), the proposed clearing is not likely to impact on the environmental values of any conservation areas.</p> | Not likely to be at variance | No |

| Assessment against the Clearing Principles | Variance level | Is further consideration required? |
|--|------------------------------|------------------------------------|
| Environmental values: land and water resources | | |
| <p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Weelumurra Creek transects the application area, on which basis the proposed clearing will impact vegetation growing in association with a watercourse.</p> <p>However, based on the small scale of proposed clearing and the condition of the vegetation, it is unlikely that clearing will have an appreciable impact on any riparian vegetation present within the application area, or the creek itself (Fortescue, 2020).</p> | At variance | No |
| <p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are not susceptible to wind, water erosion, nutrient export or salinity. Noting the extent and location of the proposed clearing and the reported condition of the vegetation (Fortescue, 2020), the proposed clearing is not likely to have an appreciable impact on land degradation.</p> | Not likely to be at variance | No |
| <p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>The nearest wetland, the Fortescue Marsh, is located in excess of 45 kilometres from the application area and has no topographic connectivity to the application area. The application area is not in a Public Drinking Water Source Area. Although the application area transects Weelumurra Creek, the clearing area in this particular parcel is relatively small (approximately 0.3 hectares). Weelumurra Creek is a non-perennial watercourse that flows during storm events and cyclonic rainfall. Water quality is typically turbid, containing high levels of suspended solids during these events (Fortescue, 2020). Clearing in this area is not likely to significantly deteriorate surface or groundwater quality.</p> | Not likely to be at variance | No |
| <p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The small scale of linear, clearing in combination with the mapped soils and topographic contours in the surrounding area would indicate that the proposed clearing is not likely to contribute to an increased incidence or intensity of flooding.</p> | Not likely to be at variance | No |

Appendix C – Vegetation condition rating scale

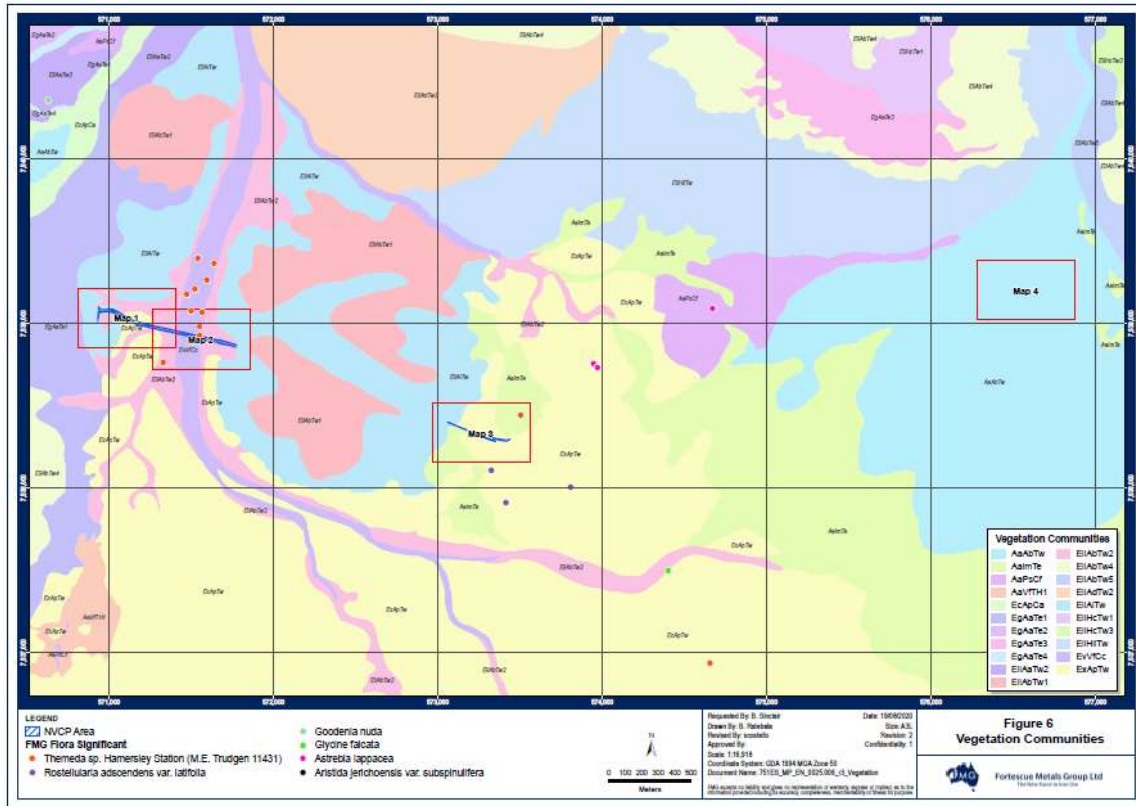
Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

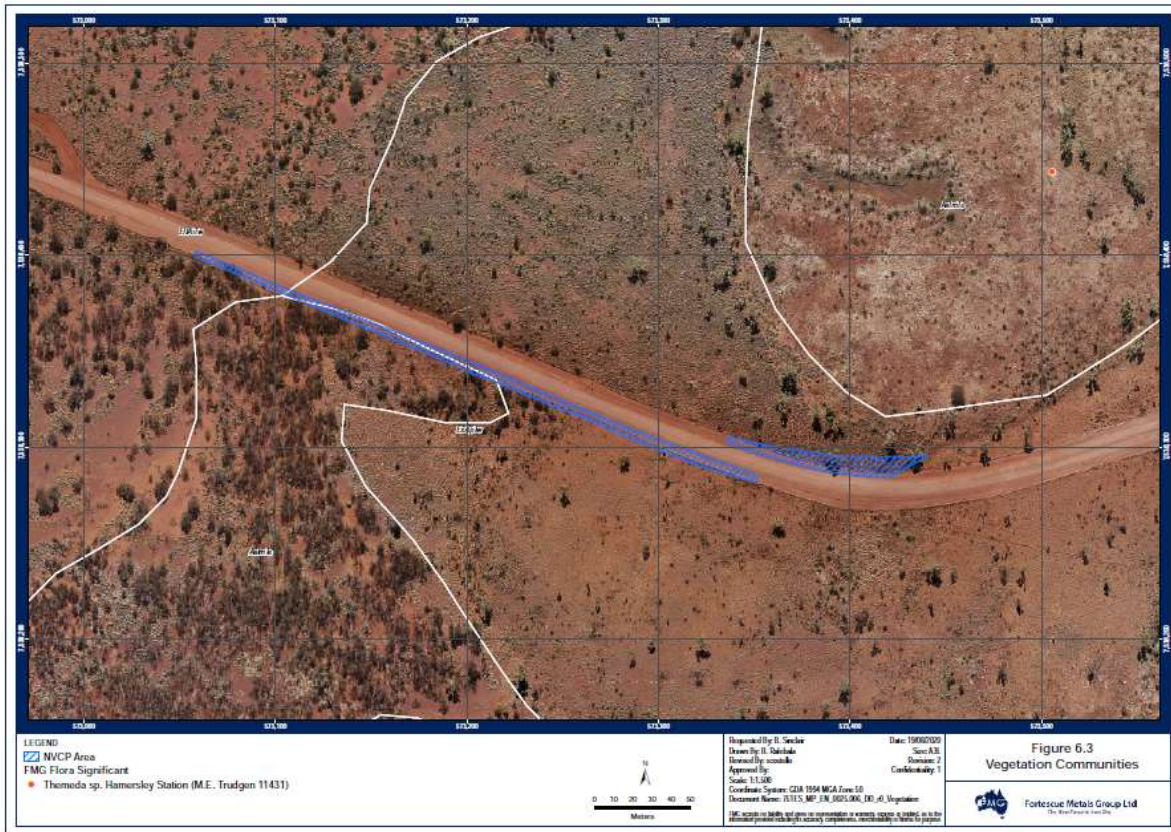
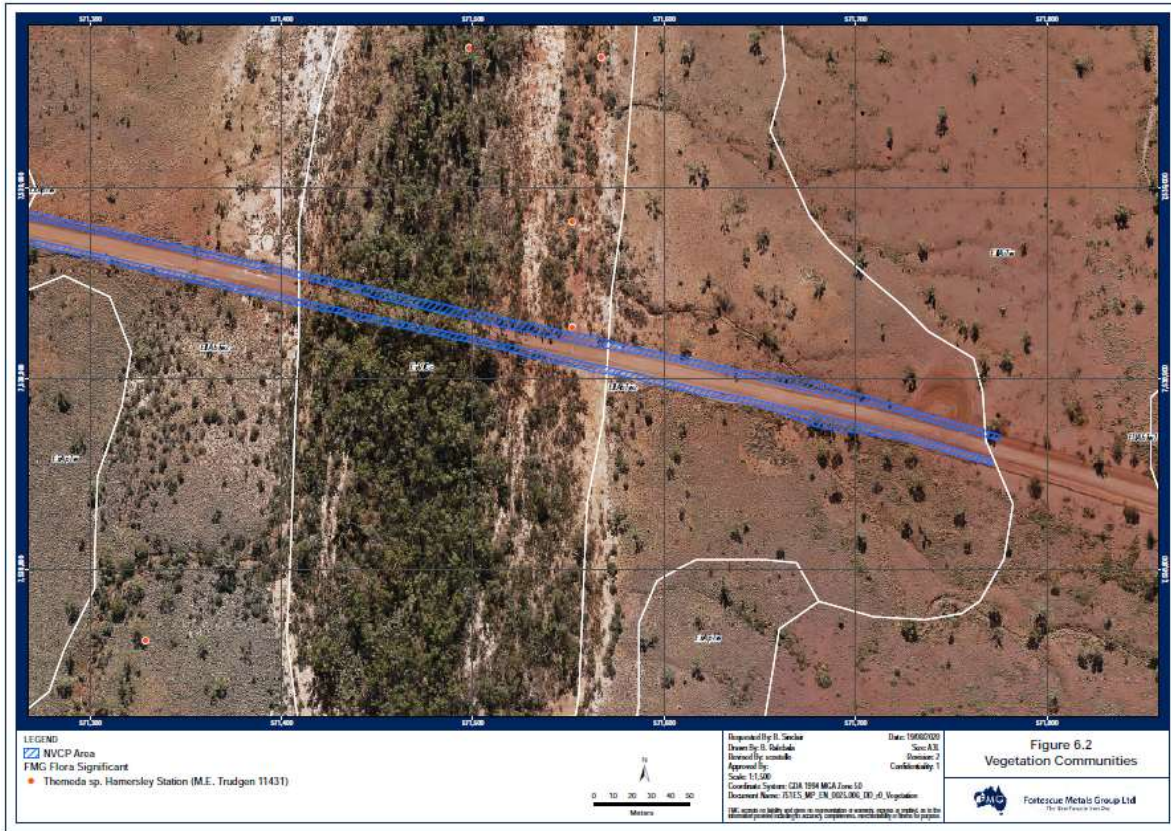
Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery, 1994)

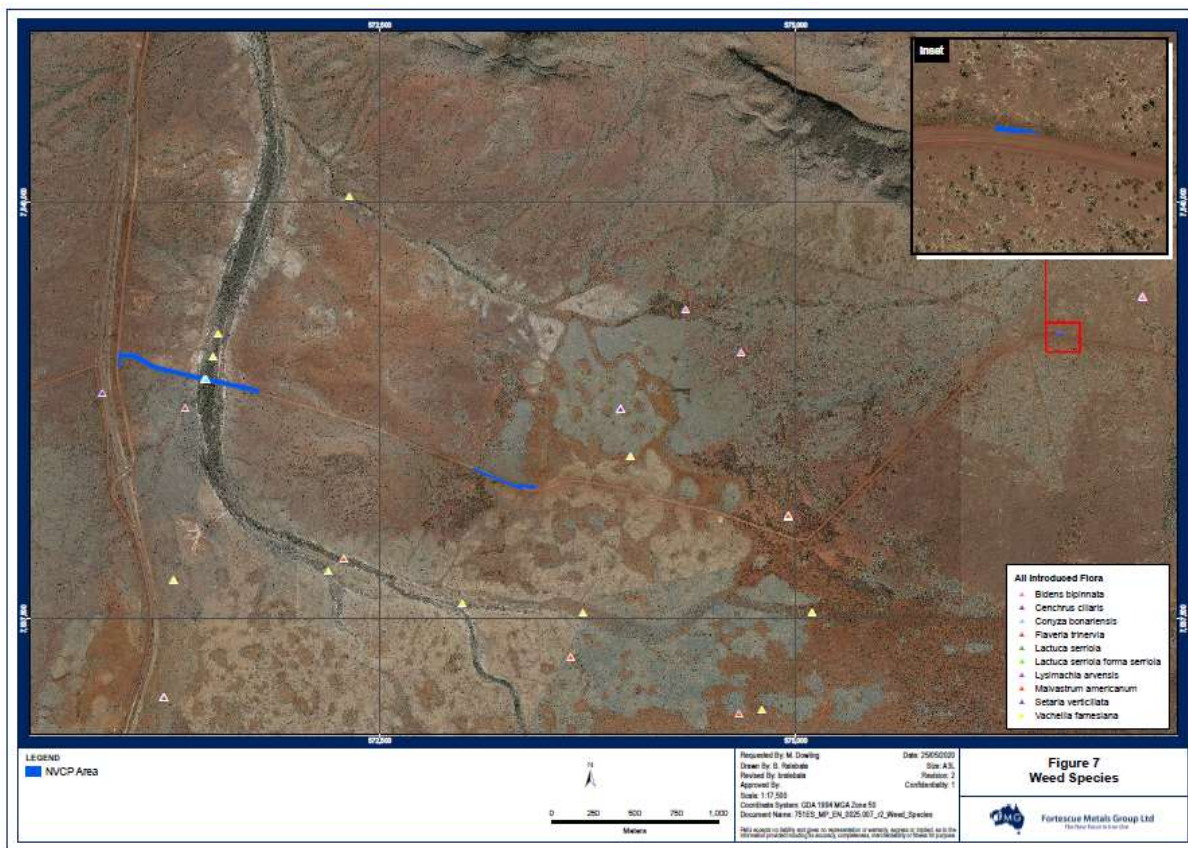
| Condition | Description |
|---------------------|--|
| Pristine | Pristine or nearly so, no obvious signs of disturbance. |
| Excellent | Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. |
| Very Good | Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing. |
| Good | Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing. |
| Degraded | Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing. |
| Completely Degraded | The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs. |

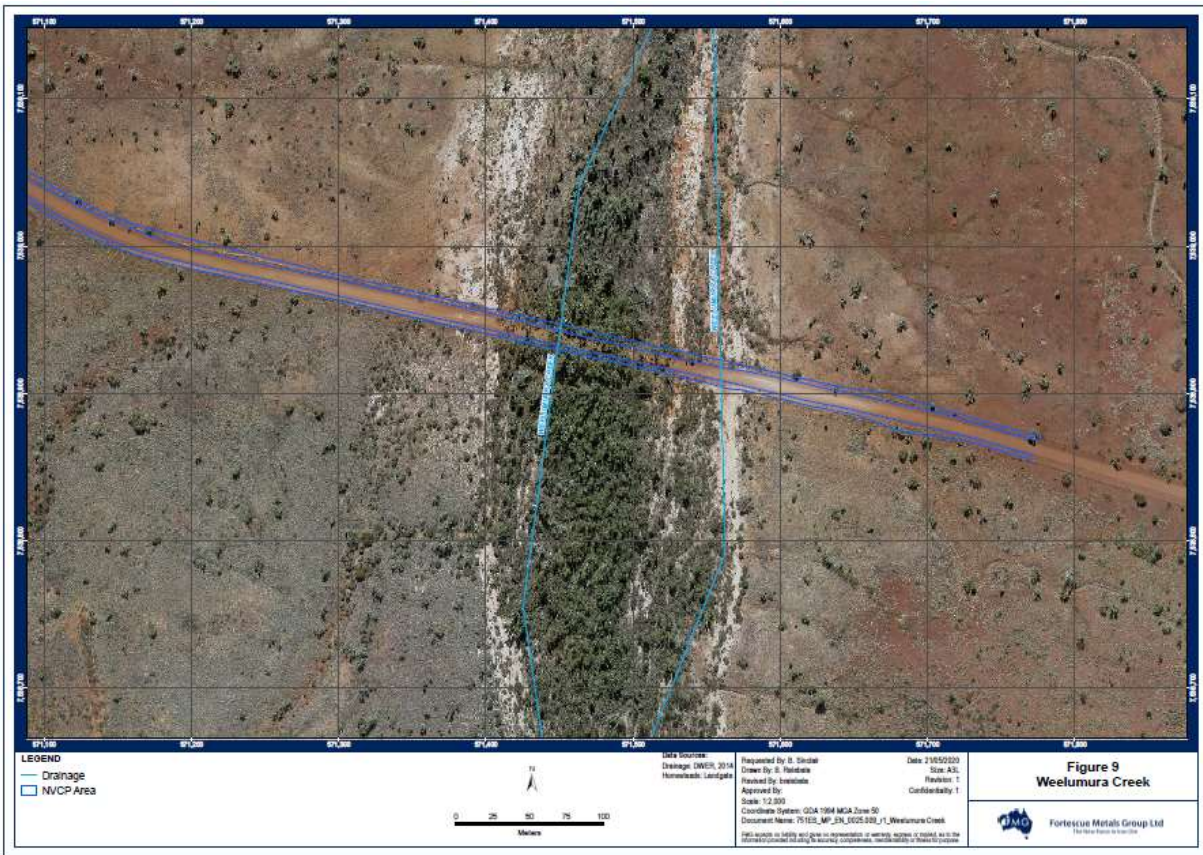
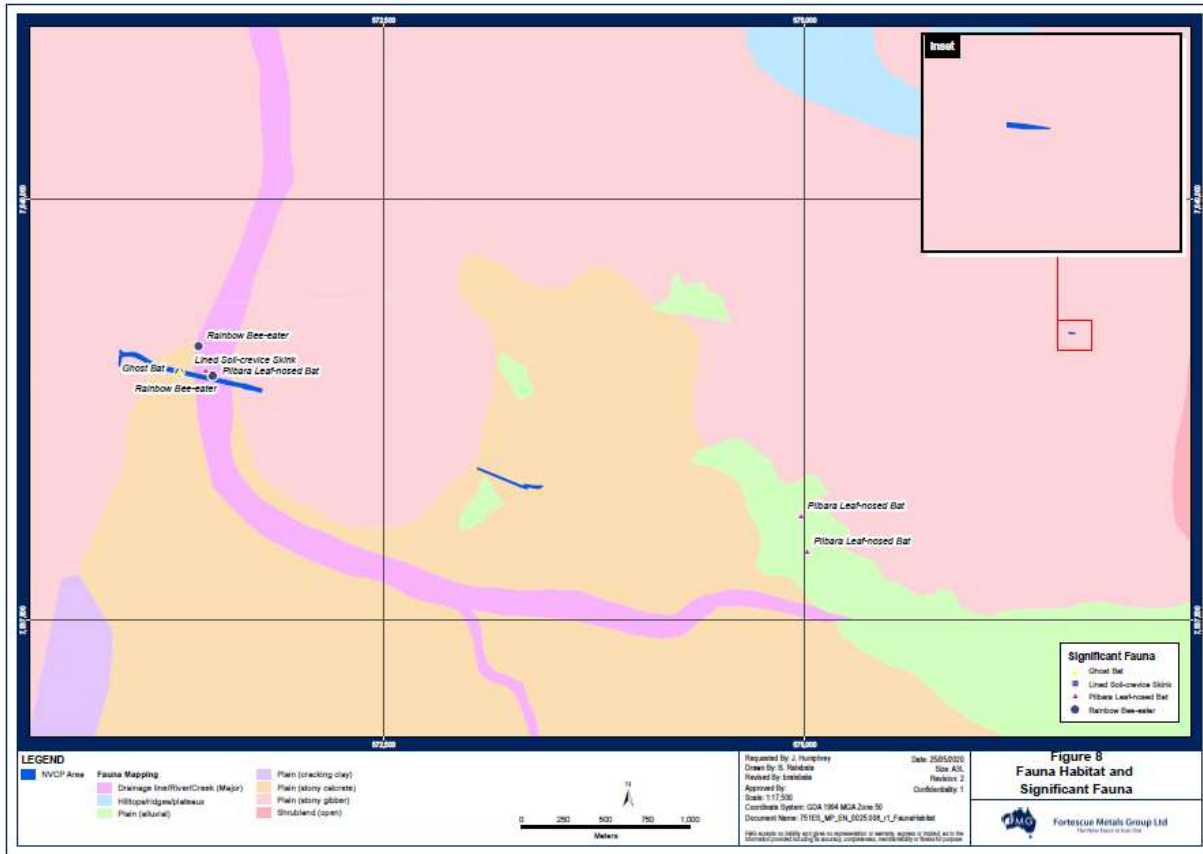
Appendix D – Biological survey information excerpts

Vegetation mapping, fauna habitat, records of weeds and map showing Weelumurra Creek extracted from Fortescue (2020) and referred to in the assessment.









Appendix E – References and databases

1. GIS datasets

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Aboriginal Heritage Places (DPLH-001)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

2. References

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Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed August 2017.

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